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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,134	03/04/2002	Niklas Linkewitsch	10559-709001 / P13318	5143
20985	7590	01/05/2006	EXAMINER	
FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			DYKE, KERRI M	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/091,134	Applicant(s) LINKEWITSCH, NIKLAS	
	Examiner Kerri M. Dyke	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 5, 9-12, 14, and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Aslanis et al. (US 6,359,933).
4. In regards to claim 1, Aslanis discloses a method of aligning a frame in a digital communication system, the method comprising: comparing a portion of a received data sequence to a portion of a predetermined sequence; determining whether a total number of comparison errors exceeds a tolerance threshold that is greater than zero; and aligning the frame if the threshold is not exceeded. Figure 2 discloses the flow chart for this method. If at block 84 the correlation (which is a comparison) exceeds the threshold, i.e. there are few errors, the transmission is assumed to be aligned and nothing further is done. If it is determined that synchronization has been lost each of the next X number of frames is tested. The best result is determined in blocks 90 and 92 and the frame is realigned.

5. In regards to claim 3, Aslanis discloses the method of claim 1 wherein: the portion of the received data sequence and the portion of the predetermined sequence are compared in multi-bit symbols, and the total number of comparison errors comprises the number of symbols that are not perfectly matched. Column 4 lines 34-35 discloses using multi-bit symbols.

6. In regards to claim 5, Aslanis discloses the method of claim 1 further comprising: comparing a second portion of the received data sequence to a second portion of the predetermined sequence; determining a second total number of comparison errors based on the second comparison; and determining whether the second total number of comparison errors exceeds a second tolerance threshold. Column 9 lines 19-23 and 4-48 disclose that the comparison may be repeated over successive frames to ensure that noise is exerting significant influence.

7. In regards to claim 9, Aslanis discloses the method of claim 1 further comprising determining a length for the portion of the received data sequence and the portion of the predetermined sequence that are being compared. Column 4 lines 40-41 discloses allocating a variable number of bits to each signal. Column 6 lines 30-40 discloses that the length of the portion of the received data sequence and the portion of the predetermined sequence are equal and that each is one frame.

8. In regards to claim 10, Aslanis discloses the method of claim 1 further comprising determining the tolerance threshold. Figure 2 block 98 discloses that the threshold can be changed if necessary.

9. In regards to claim 11, Aslanis discloses the method of claim 1 further comprising using the method in a high-speed networking environment characterized by the existence of bit errors.

Column 2 line 14 discloses a transmission rate of up to 6.8 Mb/s. Column 1 lines 50-55 discloses that the environment has bit errors.

10. In regards to claim 12, Aslanis discloses a method of aligning a frame containing a frame alignment sequence ("FAS"), the method comprising: comparing a portion of a received sequence to a portion of the FAS; allowing a tolerance to bit errors in the received sequence by using a tolerance threshold greater than zero; and accepting an error in the comparison by aligning the frame if the tolerance threshold is no smaller than a total number of comparison errors. Claim 12 is rejected upon the same basis as claim 1. Aslanis discloses the method is relation to frames and a superframe, but the method is analogous to one in which the combination of data payload and synchronization information is referred to as a frame and each block or symbol could be a block, symbol, sub-frame, etc. The synchronization frame of Aslanis is a frame alignment sequence.

11. Claim 14 is rejected upon the same basis as claim 3.

12. In regards to claim 17, Aslanis discloses a device for use in aligning a frame, the device comprising: parallel compare circuits configured to receive data and a predetermined sequence, and to produce a comparison result; and a state machine configured to receive the comparison result from the parallel compare circuits and to produce a frame alignment determination. Figure 1 discloses a device for frame alignment. Buffer, 36, acts a serial-to-parallel converter. As disclosed in column 9 lines 28-53, if necessary each frame is compared and the results are sent to a decision unit, or state machine, (block 92 of figure 2). The best frame is chosen and the signal is aligned.

13. In regards to claim 18, Aslanis discloses the device of claim 17 wherein: each of the parallel compare circuits is configured to produce a separate comparison result, and the state machine is configured to receive each of the separate comparison results. Column 9 lines 35-37 discloses that the state machine receives each of the separate comparison results.

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-2, 4, and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ghuman et al. (US 6,081,570).

16. In regards to claim 1, Ghuman discloses a method of aligning a frame in a digital communication system, the method comprising: comparing a portion of a received data sequence to a portion of a predetermined sequence; determining whether a total number of comparison errors exceeds a tolerance threshold that is greater than zero; and aligning the frame if the threshold is not exceeded. Figure 20 discloses comparing each bit to a known sequence. The number of errors is totaled and compared to a threshold. If the total is below the threshold it is assumed that the synchronization signal has been found and the frame is aligned. If the error total is above the threshold the synchronization signal has not been found and the search method continues.

17. In regards to claim 2, Ghuman discloses the method of claim 1 wherein: the portion of the received data sequence and the portion of the predetermined sequence are compared in a bit-

wise fashion, and the total number of comparison errors comprises the number of bits that are not perfectly matched (figure 20 block 436).

18. In regards to claim 4, Ghuman discloses the method of claim 1 further comprising determining the total number of comparison errors between the portion of the received data sequence and the portion of the predetermined sequence (figure 20 block 438).

19. Claim 12 is rejected upon the same basis as claim 1.

20. Claim 13 is rejected upon the same basis as claim 2.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghuman et al. (US 6,081,570).

23. In regards to claim 15, Ghuman discloses a method comprising: compare a portion of a received sequence to a portion of a predetermined sequence; determine whether a total number of comparison errors exceeds a tolerance threshold that is greater than zero; and align the frame if the threshold is not exceeded. (See the claim 1 rejection.)

Ghuman does not disclose instructions, stored on a computer-readable medium, for causing a computer to perform the stated operations.

It would have been obvious to one of ordinary skill in the art to store Ghuman's instructions on a computer-readable medium because doing so would allow for increased portability and easier distribution.

24. Claim 16 is rejected upon the same basis as claim 2.

25. Claims 5-8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslanis et al. (US 6,359,933) in view of Tsubaki et al. (US 5,333,148).

26. In regards to claim 5, Aslanis discloses the method of claim 1 further comprising: comparing a portion of the received data sequence to a portion of the predetermined sequence; determining a total number of comparison errors based on the comparison; and determining whether the total number of comparison errors exceeds a tolerance threshold. Aslanis does not disclose comparing a second portion of received data.

Tsubaki discloses comparing a second portion of data in figure 4.

It would have been obvious to one of ordinary skill in the art to compare a second portion of data in order to overcome possible distortion errors, as taught by Tsubaki in figure 4.

27. In regards to claim 6, Aslanis and Tsubaki disclose the method of claim 5 wherein the second portion of the received data sequence equals the first portion of the received data sequence. Tsubaki figure 4 discloses that the first portion is demodulated and distortion is eliminated. After distortion equalization the first portion is then the second portion. Therefore, the second portion is inherently equal to the first portion.

28. In regards to claim 7, Aslanis and Tsubaki disclose the method of claim 5 wherein the first comparison is performed before the second comparison. Tsubaki figure 4 discloses that the first comparison is performed and then the second comparison is performed if necessary.

29. In regards to claim 8, Aslanis and Tsubaki disclose the method of claim 5 wherein the second comparison is performed before the first comparison. Claim 8 is rejected upon the same basis as claim 7 because the label of first comparison and second comparison is arbitrary. The comparison considered being the first comparison in claim 7 could be considered the second comparison in claim 8.

30. In regards to claim 19, Aslanis discloses the device of claim 17 but not further comprising an additional compare circuit, not in parallel with the parallel compare circuits, the additional compare circuit being configured to receive data and the predetermined sequence and to produce another comparison result which the state machine is further configured to receive.

Tsubaki figure 3 discloses that the second comparison is not in parallel with the first comparison.

It would have been obvious to one of ordinary skill in the art to compare a second portion of data in order to overcome possible distortion errors, as taught by Tsubaki in figure 4.

Conclusion


31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaul et al. (US 4,002,845), Taniguchi et al. (US 5,442,405), and Gothe et al. (US 6,049,577) each disclose methods for comparing bits of an incoming signal to a reference signal and based upon the number of errors determining the location of the synchronization sequence.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd


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SUPERVISORY PATENT EXAMINER
EBC 1/4/06